ARCHITECTURAL LANDSCAPE, HEALTH
AND BEHAVIOR OF INHABITANTS

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ABSTRACT
Architectural landscape is believed to influence the behavioral pattern of its users especially as it concerns aesthetic appreciation, health and well-being, security consciousness and circulation patterns. It is important to analyze the range of architectural landscape designs that influence environmental psychology and their effects on health resulting from use, and to relate the goal of sustainability movement in the creation of an environmentally friendly society. This is because if the movement is to be successful, then focus must equally be on the relationship between people, what they do, take and offer to their physical environments.

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INTRODUCTION
Architectural landscaping influence on the behavior patterns of users has gained more attraction in recent times especially in the perspective of the relationship between the physical environment and human behavior so that architectural design may begin to promote and affect environmentally friendly behavior in its users. Three fields of psychology that are involved in this quest are social psychology, environmental psychology, and cognitive psychology, all of which are essential in the understanding of the unique relationship people have with their environment. The outcome of this relationship is clearly painted by Henderson (2012) when he avers thus:

Because of the extraordinary and exponential growth of population and of the technological/economic system, human beings have become pervasive and dominant forces in the health and well-being of the Earth and its inhabitants. The sum of humanity and the expansive

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dynamic of industrial capitalism constitute a planetary force comparable in disruptive power to the Ice Ages and the asteroid collisions that have previously redirected Earth's history. While the Earth's population has grown from 1 billion to 6.7 billion in the last two centuries, energy consumption has risen 80 times, and economic output has risen 68 times. Most of that has occurred in the last half-century. Despite the impressive array of environmental protection laws and programs established in the industrialized countries since 1970, all living systems (oceans, fisheries, forests, grasslands, soils, coral reefs, wetlands) are in long-term decline and are declining at an accelerating rate, according to all major national and international scientific assessments. Some (e.g., major ocean fisheries, forests, grasslands, soils, coral reefs, wetlands) have collapsed, and more are moving rapidly to total collapse. Human beings and the rest of nature are burdened by a staggering array of persistent, toxic natural and manmade chemicals, as well as air and water pollution, that are affecting our and the viability of large ecosystems.

One of the goals of the sustainability movements, at least, is the creation of an environmentally friendly society. Even architects have joined the cause of this movement with its widespread use of what they consider sustainable architectural design practices. If these movements and their causes are to be successful, it is necessary that focus be equally on the relationship between people and their physical environments. This is because sustainability is less a factor of the architectural products that we create, and more of the cooperation of the people who occupy these products. The interaction of these products and people create an environment.

Human Behavior and the Physical Environment
There is no doubt on the influence of Architecture and structure upon human behaviors. It can be said that we make our buildings and afterwards they begin to make us because “simply from living in buildings, we all possess sufficient expertise to embark on the study of the story of architecture” (Nuttgens, 1983). They regulate the course of our lives because “whether we are of it or not, Architecture is part of everybody’s personal history. The chances are that it is in a building that we are born, make love, and die; that we work and play and learn and teach and worship; that we think and make things; that we sell and buy, organize, negotiate affairs of state, try criminals, invent things, care for others. Most of us wake up in a building in the morning, go to another building or series of buildings to pass our day, and return to a building to sleep at night” (Nuttgens, 1983).

In designing and constructing environments in which people live and work, architects are necessarily involved in influencing human behavior. The architect in his training and practice is often assumed to design and perceive buildings that are without people in them, but behind this apparent emptiness is the architect’s imagination of people occupying and utilizing the spaces.
involved. On another note, it has been recognized that the way people live their lives directly determines what constitutes an appropriately designed functional space and architectural landscape. That is to submit that whether the behavior consequences of design decisions are revealed and considered as part of a post-occupancy evaluation, or consideration of propositions made by social scientists or psychologists studying the impact of a development, there are links between the design of the built environment and human behavior, both individually and collectively. Where there is an explicit intention to influence behavior, the intended influence may relate to directing people for strategic reasons, or providing a particular experience; for health and safety reasons; to provide entertainment and excitement. Whatever the intention, it is often focused on influencing social interaction and inner comfort. All buildings imply, at least, some form of social activities stemming from both their intended function and the random encounters they may generate. The arrangement of partitions, rooms, fenestrations, hallways, floor levels, relationship of mass and void, headroom, color and texture of both materials and building components, techniques used in the construction, et cetera, all serve to encourage or hinder communication and, to this extent, affect social interaction. This can occur at a number of levels and the architect is professionally empowered to control, to some degree, the contact points and lanes of access where people come together. He assumes the role of judge to determine the desirability or otherwise of such contacts.

Architects often aspire to do more than simply create buildings that are new, functional and attractive; they promise and presume that new spaces and environments they design will change behaviors and attitudes. Where architects expressly announce their intentions and ability to influence behavior, techniques used can range from broad inspirational spatial strategies, such as communal areas through the creation of potency for participation, interaction and information sharing in work places, to specific tactics such as Frank Lloyd Wright's occasional use of "very confining corridors" so that people could walk in a way "that when they entered an open space the openness and light would enhance their experience" (Jacobs, 1961). The import of appreciation of both broad strategies and specific tactics is seen from the perspective of a designer, whose agency may only extend to redesign of certain elements of a space, product or interface. It is the specific tactical techniques which are likely to be more immediately applicable, but the broader guiding strategies help set the vision in the first place. For example, in the 'conditions for city diversity' outlined by Jacobs (1961), broad strategies for understanding aspects of urban behavior are projected to have influenced generations of urbanists. Following the influence of Christopher Alexander, such strategies and tactics may be expressed architecturally in terms of patterns which describe a problem that occurs repeatedly in our environment, describing the core of the solution to that problem in a way that one "can use this solution a million times over, without ever doing it the same way twice" (Jacobs, 1961).

Public Health and Well Being
For some time now, there has been a
shift in the health agenda towards the promotion of healthy lifestyle behaviors and choices. There has also been recognition of the role environments play in enhancing health, especially in the realization that inactive or less active lifestyles have led to an increase in preventable diseases and these are placing increasing pressures on public health service. Parks and green spaces contribute to all aspects of health and well-being including increasing levels of physical activity. Experiencing and using clean, architecturally planned, open, green space can promote mental well-being, relieve stress, overcome isolation, improve social cohesion and alleviate physically related health, thereby reducing sicknesses and increasing productivity. Incorporating open spaces in architectural landscaping designs provides the opportunity where people can avail themselves of the opportunities to go for a walk, play games to exercise or just enjoy the surroundings and fresh air.

Architecture is not only about buildings. It is also about landscapes since, in the submission of Henderson (2012), “our way of life depends on a stable climate”. Hence, community-based green spaces are very desirable because they primarily create therapeutic opportunities for, not just the disadvantaged or excluded groups such as adults with learning difficulties, but also for all persons. An increasing number of groups are beginning to integrate agriculture and gardening activities, both for better nutrition/herbs and for mental well-being. This approach is significant because “when we look at the scale of human impact and needs, it is clear that remaking the nature and the location of the built environment must be a top priority. Buildings have a significant impact on the environment and human health, accounting for one-sixth of the world’s freshwater withdrawals, one-quarter of its wood harvest, and two-fifths of its material and energy flows (70 percent of electricity), with very large negative impacts on the environment and health. Structures also impact areas beyond their immediate location, affecting watersheds, air quality, transportation patterns of communities—over four-fifths of all transportation is from one building to another. Moreover, people in developed countries spend nearly 90 percent of their lives indoors, making the quality of the indoor environment key to good health. The resources required to create, operate, and replenish this level of infrastructure are enormous and are diminishing. By all accounts, we will have to replace three-quarters of the existing building stock and double the built environment in the next 40 years, to accommodate the demand. This is not possible without a radical change in the design, construction, operation, and location of buildings”. Parks,
woodlands or other open spaces help to reduce health inequalities, regardless of social class. In urban areas people are more likely to rate their health as good if there are safe and pleasant green spaces in their neighborhood (WHO, 2010).

The World Health Organization (WHO, 2010) defines health as “a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity”. This understanding of health in terms of physical condition, vis-à-vis landscape, provides the background for investigating the role of landscapes in the individual and societal well-being. Today’s society is faced with ever increasing challenges of stress-related diseases and the knowledge that simple exposure to good landscapes can enhance health and well-being, can also re-ignite interest and investment in architectural landscape design and planning. The knowledge about how different landscapes and elements impact positively on health is needed by architects and planners in order to provide new design strategies that are beneficial to human health. For ages, in many societies and in different cultures, links between landscape and health have been recognized. The belief that viewing vegetation, water and other natural elements can ameliorate stress and is beneficial to patients in healthcare environments dated to the earliest cities in Persia, China and Greece. In the Middle Ages, the earliest hospitals in Europe were infirmaries domiciled in monastic communities where cloistered gardens were essential parts of the environment that were used to bring relief to the ill (Velarde M.D. et al, 2007).

Effects of Layout and Physical Elements on Human Behavior and Crime Control
Practically, most architectural patterns for influencing behavior involve one way or the other, the physical arrangement of building elements inside or outside building enclosures and also in the manipulation or juxtaposition of building materials’ properties. In each case, there is always intent of the possibility of changing people’s perceptions of what behavior is possible or appropriate, and the possibility of actually instigating the occurrence or not of some behaviors. The physical arrangement of elements can be broken down into different aspects of positioning and layouts. That is locating elements in particular places to encourage or discourage people’s interaction with them; placing them in people’s way to prevent access or aligning in order to channel or direct people in a particular way.

For example, in larger developments where there is scope to plan more ambitiously, the layouts of shops, hotels, casinos and theme parks, can also make use of multiple aspects of positioning to influence and control shoppers’ and customers’ paths. Changes in material properties can involve drawing attention to particular behavior (e.g. rumble strips on a road to encourage drives to slow down, or making it more or less comfortable to do an activity. Fast food restaurants spots use hard chairs that quickly grow uncomfortable so that customers rapidly turn over). The application of some of the physical positioning and layout and material property is determined by particular social or health intent.

Often, combining positioning and
material properties, the effect of different seating types and layouts on behavior comprises a significant area of study. Hence, enhancing likely interactions between people can also be achieved by arrangement of chairs around tables and, overall room layouts in classrooms and in mental hospitals (Sommer, 1969; Koneya, 1976). Sommer’s design intervention strategy in the dayroom of elderly ladies’ ward in a State hospital in Canada started by reducing the number of couches around the walls and adding tables and chairs in the centre of the room, with flowers and magazines that led to major increases in the amount of conversation and interaction between residents. Space is a tool of mental, psychological and physical control. It is possible to conceive that people may, when subjected to certain space constraints in which to live and work, be forced into behaviors, relationships and emotional outlets that are unusual because the ambience is overly stressful. Architecture can serve as a regulatory force and has been used to influence and control public behaviors in a number of ways. Direct use of architecture to change the economic or demographic make-up of areas includes policies of zoning of shopping centers and business/residential districts in order to influence social activities in an area, and measures of restriction of movements based on social classes.

Perhaps difficult to extract from the political dimension of architecture is the notion of disciplinary architecture. This notion covers issues from design measures range from anti-homeless park benches to prisons design, that are often based on the concept of defense of the public against undesirable elements. Flusty (1997) identified five species of interdictory spaces usually designed to intercept and repel or filter potential users, especially in residential contexts, as well as in public spaces. Other species include stealthy space – comprising areas which have been deliberately concealed from general view; slippery spaces – spaces with no apparent means of approach; crusty spaces - spaces that cannot be accessed because of obstructions; prickly spaces - spaces which are constantly under surveillance threatened surveillance (Flusty, 1997).

Crime preventive design have recently received significant attention, like in the United Kingdom via initiatives like the Design Against Crime Research Centre, through innovative product design interventions taking account of the environmental contexts in which crime occur. While the focus may be on 'better' products through environmental design, (CPTED) efforts have been at focusing on redesigning architectural elements to discourage particular behaviors. According to Minton (2009), crime prevention has become a condition of planning permission for some large residential developments. In this approach, uncontrolled open access or open access, either in a house, estate or neighborhood, is no longer an acceptable practice. Natural surveillance implies designing spaces that afford opportunities for residents and agents through design and landscape environments that enable building users to observe activities within and around their surroundings (a concept applicable in the context of digital communities and social media sometimes termed peer-vigilance). Here, there are parallels with the Jacobs concept of 'eyes on the street', though implementing natural surveillance via enclosed, gated communities where strangers
necessarily stand out means that the residents can become targets (Minton, 2009).

**Conclusion**
Architectural landscaping elicits and evokes actions and behaviors from anticipated users. Designs can be tailored to achieve specific needs in terms of behaviors and also in terms of controlling the quality and safety of the environment. The quality of landscapes influences the quality of health the inhabitants of such landscapes enjoy. This implies that architectural landscape designs can be used as tool of control and this makes it a veritable political tool. Hence, the concept, design and implementation of any architectural landscape determine the kind of life that would most appropriately unfold within and around it. Though methods and practices of achieving any design vary, any architectural landscaping design should be suited to promoting environmentally friendly behaviors as well as ensuring the health and safety of intended users. Proper articulation and understanding of the dynamics of the built environment is imperative to ensuring the best quality of life building and neighborhood dwellers. Key in this articulation is the understanding of the relationship between human behavior and the landscape and the extent of degree of affectation landscapes have in instigating or evoking emotions and behaviors. Aesthetic quality is one inherent property of landscape that elicits pleasantness and delight and can induce temperance that will promote sustainable positive human behaviors. Further investigation of and incorporation of this submission may lead to a more efficient, safe and healthy communities, thereby, using architectural landscaping as tool of sustainable development and environmental control.
REFERENCES


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